Assignment No:7

To use map associative container.

Write a program in C++ to use map associative container. The keys will be the names of states and the values will be the populations of the states. When the program runs, the user is prompted to type the name of a state. The program then looks in the map, using the state name as an index and returns the population of the state

Prerequisites:

Object Oriented Programming

Objectives:

To learn the concept of map associative container.

Theory:

Map associative container:

Map associative container are associative containers that store elements in a mapped fashion. Each element has a key value and a mapped value. No two mapped values can have same key values.

map::operator[]

This operator is used to reference the element present at position given inside the operator. It is similar to the at() function, the only difference is that the at() function throws an out-of-range exception when the position is not in the bounds of the size of map, while this operator causes undefined behaviour.

Syntax :

***mapname*[*key*]**
Parameters :
Key value mapped to the element to be fetched.
Returns :
Direct reference to the element at the given key value.

Examples:

Input : map mymap;

mymap['a'] = 1;

mymap['a'];

Output : 1

Input : map mymap;

mymap["abcd"] = 7;

mymap["abcd"];

Output : 7

//Program

```
#include <map>
#include <iostream>
#include<string>
usingnamespacestd;

    intmain()
    {
       // map declaration map<int,string>mymap;

       // mapping integers to strings mymap[1] = "Hi";
       mymap[2] = "This";
       mymap[3] = "is";
       mymap[4] = "NBN";

       // using operator[] to print string
       // mapped to integer 4 cout<<mymap[4];
       return0;
    }
```

Output:

NBN

Facilities:

Linux Operating Systems, G++

Algorithm:

1. Start.
2. Give a header file to map associative container.
3. Insert states name so that we get values as population of that state.
4. Use populationMap.insert().
5. Display the population of states**.**

End.

Input:

Information such as state name to map associative container.

Output:

Size of population Map: 5

Brasil: 193 million

China: 1339 million

India: 1187 million

Indonesia: 234 million

Pakistan: 170 million

Indonesia's populations is 234 million

Conclusion:

Hence, we have successfully studied the concept of map associative container

Questions:

1. What is an associative container in C++?
2. What is map in C++?
3. How to do declare a map?
4. Explain Associative mapping with example?